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Case Study

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CASE STUDY REPORT ON THE CORONARY ARTERY DISEASE

Simhavalli.Godavarthi *¹, T. Rushi Naidu², S. Dhana Lakshmi³¹ Avanthi Institute of Pharmaceutical Sciences, Tagarapuvalasa, Andhra Pradesh² Assistant Professor, Department of Pharmacy Practice, Avanthi Institute of Pharmaceutical Sciences³ Assistant Professor, Department of Pharmacy Practice, Avanthi Institute of Pharmaceutical Sciences

Article History	Abstract
Received on: 28-01-2022 Revised on: 10-02-2022 Accepted on: 25-03-2022	The most prevalent kind of heart illness is coronary artery disease, or CAD. For both men and women in the US, it is the main cause of death. The arteries that provide blood to the heart muscle constrict and stiffen, leading to coronary artery disease (CAD). This results from the accumulation of plaque, a mixture of various materials and cholesterol, on their inside walls. The accumulation is known as atherosclerosis. Less blood can pass through the arteries as it gets bigger. The cardiac muscle is consequently unable to receive the blood or oxygen it requires. The majority of heart attacks result from a blood clot abruptly stopping the heart's blood flow, which permanently damages the heart. In addition to weakening the heart muscle over time, CAD can potentially cause arrhythmias and cardiac failure. Heart failure refers to a heart that is unable to adequately pump blood throughout the body. Changes in the heart's regular beating rhythm are known as arrhythmias.
Keywords: Coronary artery disease, atherosclerosis, arrhythmias, cardiac failure	
	

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*Corresponding Author

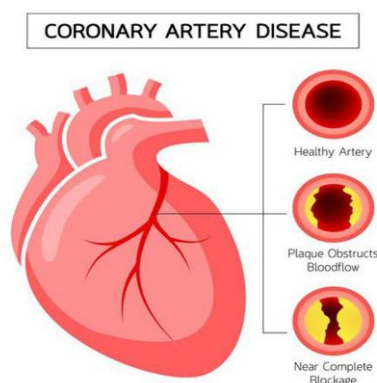
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Introduction

Coronary artery disease (CAD) is defined as the reduced or absence of blood flow to the heart. It is also known as ischemic heart disease [1]. General symptoms are Shortness of breath, palpitations, tachycardia, dizziness, extreme weakness, sweating and nausea [2]. Some patients may not experience any symptoms in rare cases people might experience "silent" heart attack. The most common risk factors are high blood pressure, smoking, alcohol, and diabetes, lack of exercise, obesity, high cholesterol and poor diet [3].



Case Study

A 53 year old male patient came to OPD with the complaints of chest pain since 1 week not associated with cough, cold, fever and breathlessness. Patient complained loss of appetite, disturbed sleep, and hard stools. He has history of fever and cough, backache on right side since 2 years and renal calculi since 4 years. He

has no history of diabetes, epilepsy, hypertension, and tuberculosis he is a smoker and alcoholic. His vitals are normal where as his S2 sounds of heart are not heard properly. His lab investigations interpret elevated Haemoglobin (16.9 gm), lymphocytes (43%), decreased levels of monocytes (0%) and troponin 1 positive. There is no abnormality found in his physical examination. Based on the patient's subjective and objective data he is diagnosed with coronary artery disease. He is prescribed with Tab. paracetamol + cephalosporin 500mg BD P/O, Tab. esomeprazole 40mg OD P/O, Tab. Ramipril 2.5mg OD P/O, Tab. Atorvastatin + Clopidogrel + Aspirin 325mg OD P/O, Tab. Clopidogrel 300mg OD P/O, Tab. Atorvastatin 40mg OD P/O, Syp. salbutamol + Ambroxol + Theophylline 10ml BD P/O and syp. Lactulose 30ml H/S P/O

Discussion

Cephalosporin is 3rd generation cephalosporin penicillin binding protein inhibitor which is an antibiotic drug. It inhibits the bacterial cell wall biosynthesis. This is given to the patient to reduce the risk of infection. Esomeprazole it is a proton pump inhibitor which inhibits potassium transporting alpha chain 1 and suppress the final step of gastric acid production in the patient. Ramipril is an ACE inhibitor in hypertensive class of drugs it inhibits angiotensin converting enzyme and competes with angiotensin binding to ACE and there by decreases the blood pressure in the patient. Clopidogrel is an ADP inhibitor in antiplatelet drugs it acts by antagonist of P2Y Purinoreceptor 12 and prevents diphosphate to its platelet receptor and inhibits platelet aggregation in the patient. Atorvastatin is an HMG-CoA Reductase inhibitor in hypolipidemic drugs it inhibits hepatic enzymes HMG-CoA reductase and prevents cholesterol biosynthesis in the patient. Ambroxol syrup is a mucolytic agent. It is a metabolite of brohexine. It works by increasing break down of acid mucopolysaccharide fibre in the mucous making it thinner and less viscous thereby providing protection against infections. Syrup Lactulose is a laxative it is a synthetic disaccharide and, in the colon, it breaks down into lactic acid, formic acid and acetic acid which results in increasing osmotic pressure and acidification thereby soften the stool.

Pharmacist Intervention

Following are the interactions found in the case study :

1. Esomeprazole + clopidogrel = Esomeprazole decreases the effects of clopidogrel by affecting hepatic enzymes CYP2C19 Metabolism.

2. Aspirin + clopidogrel = either of it increases the toxicity of other by pharmacodynamic synergism
3. Esomeprazole + Theophylline = Esomeprazole increases the toxicity of theophylline

When the interaction of Esomeprazole and clopidogrel leads to serious effects so, we need to use an alternative drug. Low dose of aspirin and anti-coagulants is needed in case of cardiovascular issue therefore, close monitoring is must.

Conclusion

There are many risk factors associated with the disease early detection is needed if neglected it may lead to life-threatening issue and cause additional complications.

Ethical Considerations

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Conflict of Interest

The authors have declared no conflict of interest.

Author Contribution

All authors contributed equally.

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